

# THE WARBLER

## AN EDUCATIONAL WEEKLY

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### Dear Artist, Creators, Friends

Think of the ways that we describe how long it will take us to do something, the amount of an item we have, the distance between us and something else, or the temperature outside. Imagine trying to explain simple things without having references like inch, mile, hour, pound, or degrees. This is why **measurements**, and the words that we have created to describe these measurements, are so important. For centuries, various civilizations have found ways to catalog the passage of time or distance. The first known system of measuring distance in the world was created in Egypt. The Egyptian cubit was established in 3 BC and was the distance of an average forearm from elbow to middle finger. This measuring system was used for constructing buildings and monuments like the great pyramids of Giza.

The act of measuring objects doesn't only apply to the construction of buildings either. Ancient civilizations also had to understand how and why time passed. Many historians believe that timekeeping extends much farther back than we know, but the earliest known calendar was created during the Bronze Age (3100 BC). The Sumerians, a civilization that resided in what is now Syria, Turkey, and Iraq, created this calendar based on their observation of the moon. This calendar has 12 months with either 29 or 30 days. This concept may sound familiar because it is like the way we measure time today.

You might ask yourself why so many ancient civilizations worked so hard to find ways to measure things. You might also wonder why we still rely so heavily on measurements. The idea behind creating different units of measurement is to have a shared understanding. Ancient civilizations had to find ways to communicate abstract ideas easily. The use of measurements is central to every architectural wonder we have known of today and proves that when people come together with a shared idea, they can create amazing things. Measurements are one smaller example of human innovation and creativity and the importance of communicating ideas to those around you. I hope you enjoy reading this issue of *The Warbler* and keep in mind that there is no measure placed on creativity!

*Katie and the APAEP Team*

“The important thing is not the measurement of how many or few things you have, but your own state of mind and how you feel about the things you have and don't have.”

FUMIO SASAKI // Japanese author, editor, and minimalist

### WORDS INSIDE

WORDS INSIDE “WHY ISN'T THE U.S. ON THE METRIC ...”

**antiquated** | old-fashioned or outdated

**compulsory** | required by law or a rule; obligatory

WORDS INSIDE “HOW HOT IS THAT PEPPER? ...”

**dissipate** | disappear or cause to disappear

FOUND INSIDE “UNUSUAL UNITS OF MEASUREMENT”

**melodious** | of, producing, or having a pleasant tune; tuneful

WORDS INSIDE “HOW IS SNOWFALL MEASURED? ...”

**consternation** | feelings of anxiety or dismay, typically at something unexpected

**ambient** | relating to the immediate surroundings of something



## HISTORY

# Why isn't the U.S. on the Metric System?

BY WILLIAM HARRIS | *How Stuff Works*

As subjects of the British Empire, American colonists inherited and used the British Imperial System of measurement, which itself evolved from a tangled mess of medieval weights and measures. Even as France developed and refined the metric system throughout the late 1700s, England and its American colonies pressed forward with an antiquated measurement system.

In the Constitution of the newly formed United States of America, Article I, Section 8 provided that Congress should have the power “to coin Money ... and fix the Standard of Weights and Measures.” Although France supported the American colonies during the Revolutionary War, it became hostile to the U.S. after Jay’s Treaty was ratified in 1795. In 1798, France snubbed the U.S. when it invited dignitaries from foreign countries to travel to Paris to learn about the metric system. Even if U.S. representatives had visited Paris in 1798 and been wowed by the metric demonstration, it’s unlikely that they would have persuaded American leaders to change the country’s system of weights and measures.

Over time, however, the metric system gained traction. By the time the American Civil War ended in 1865, most of Europe had adopted the decimal-based measuring system, and the U.S. could no longer ignore it. In 1866, an act of Congress, signed into law by President Andrew Johnson, made it “lawful throughout the United States of America to employ the weights and measures of the metric system in all contracts, dealings or court proceedings.”

This time when France brought together the world’s leading nations nine years later to discuss a new international version of the metric system, the U.S. received an invitation and sent delegates. These nations signed the Treaty of the Meter, establishing the International Bureau of Weights and Measures, an International Committee for Weights and Measures to run the bureau and the General Conference on Weights and Measures to consider and adopt changes.

The U.S. received its copies of the International Prototype Metre and the International Prototype Kilogram in 1890. The Mendenhall Order of 1893 (named after T.C. Mendenhall, who served as the Superintendent of Weights and Measures at the time) stipulated that the fundamental standards for length and mass in the U.S. be based on metric units.

That means, as of this writing, the U.S. has officially — and legally — recognized the metric system for 145 years and has based the units of its standard weights and measures on metric units for almost 120 years. BUT... recognition doesn’t necessarily translate into practical use.

Mendenhall joined a growing number of scientists and political leaders who advocated making use of the metric system in the U.S. compulsory. When he died in 1924, however, America hadn’t made the move. That seemed about to change in 1971, when a U.S. National Bureau of Standards report titled “A Metric America” recommended that the U.S. transition to the metric system over the course of 10 years. In response, Congress enacted the Metric Conversion Act in 1975 but stripped out the 10-year deadline and made the conversion voluntary.

In the meantime, as globalization increased, American companies found themselves competing against international interests. More and more, foreign customers buying U.S. products required that they be delivered, labeled and produced in metric units. And when American companies went to build new factories in Europe or Asia, they faced the challenge of standardizing to U.S. measurements or the metric system — decisions with enormous financial consequences.

Recognizing these issues, Congress passed amendments to the Metric Conversion Act in 1988, designating the metric system as the “preferred system of weights and measures for United States trade and commerce” and requiring federal agencies to use “the metric system of measurement in its procurements, grants, and other business-related activities” by the end of 1992. The amendments, however, continued to make metrication voluntary for private industry, and although they encouraged the federal government to assist small businesses interested in making the conversion, progress has been slow.

By some estimates, about 30 percent of products manufactured by American companies have gone metric. The pharmaceutical industry went “hard metric,” which means its products display only metric units. Beverages, on the other hand, typically show both U.S. Customary units and metric units together, making them “soft metric.” Film, tools and bicycles are also sold in metric measurements. For the most part, though, the U.S. remains the only industrialized nation that hasn’t made the metric system compulsory. ●

“For every design goal you have, you have to have a corresponding measurement to know how you’re doing — a way of measuring success.”

TRISTAN HARRIS //  
American  
technology ethicist



## BIOLOGY

# How Hot is that Pepper?

## How Scientists Measure Spiciness

BY TWILIGHT GREENWAY | *Smithsonian Magazine* | January 10, 2013

In 2007, the Naga Bhut Joloki or “Ghost chile” was named the hottest pepper on earth. Then in 2010 the Naga Viper stole the title. And in 2012 the Trinidad Scorpion Moruga Blend moved into the lead. And for good reason.

The Scorpion ranks at round 2 million heat units on the Scoville scale. What exactly does that mean? When the scale was invented in 1912 by pharmacist Wilbur Scoville in search of a heat-producing ointment, it was based on human taste buds. The idea was to dilute an alcohol-based extract made with the given pepper until it no longer tasted hot to a group of taste testers. The degree of dilution translates to the SHU. In other words, according to the Scoville scale, you would need as many as 5,000 cups of water to dilute 1 cup of tobacco sauce enough to no longer taste the heat.

And while the Scoville scale is still widely used, says Dr. Paul Bosland, professor of horticulture at New Mexico State University and author of several books on chile peppers, it no longer relies on the fallible human taste bud.

“It’s easy to get what’s called taster’s fatigue,” says Bosland. “Pretty soon receptors are worn out or over-used, and they can’t taste anymore. So over the years, we’ve devised a system where we used what’s called high performance liquid chromatography.”

That’s a fancy way of saying that scientists are now able to determine how many parts per million of heat-causing alkaloids are present in a given chile pepper. The same scientists have also figured out that if they multiply that number by 16, they’ll arrive at the pepper’s Scoville rating (or “close enough for the industry,” says Bosland).

And, let’s face it, who would want to be the one to taste test a pepper named after a viper or a scorpion? Or maybe the better question is what sane person would? The BBC recently reported on the first man to finish an entire portion of a curry made with ghost chiles, called “The Widower,” and he suffered actual hallucinations due to the heat. Bosland told the AP in 2007 he thought the ghost chile had been given its name “because the chili is so hot, you give up the ghost when you eat it.” How’s that for inviting?

Indeed, the capsaicin, the spicy chemical compound found in chiles demands the diner’s

attention much like actual heat does. And it turns out there’s science behind that similarity. “The same receptor that says ‘hot’ to your brain is telling you ‘hot chile peppers,’” says Bosland.

And what about the rumor that very hot peppers have the potential to damage our taste buds? Not true. Bosland says we should think of chile heat like we do the taste of salt; easy to overdo in the moment, but not damaging to your mouth over the long term. Even the hottest habanero (100,000–350,000 on the Scoville scale), which can stay on your palate for hours – if not days – won’t wear out your tender buds.

Bosland and his colleagues have broken the heat profile of chile peppers into five distinctly different characteristics. 1) how hot it is, 2) how fast the heat comes on, 3) whether it linger or dissipates quickly, 4) where you sense the heat – on the tip of tongue, at the back of throat, etc., and 5) whether the heat registers as “flat” or “sharp.”

This last characteristic is fascinating for what it says about cultural chile pepper preferences (say that five times fast). Apparently those raised in Asian cultures – where chile heat has been considered one of the six core tastes for thousands of years – prefer sharp heat that feels like pinpricks but dissipates quickly. Most Americans, on the other hand, like a flat, sustained heat that feels almost like it’s been painted on with a brush.

The Chile Pepper Institute, which is affiliated with New Mexico State University, sells a nifty chile tasting wheel, which describes the heat and flavor profiles of many different chiles and offers advice on how to cook them. ●

### Some of the Hottest Peppers in 2022

Carolina Reaper | 2.2 million SHU

Chocolate Bhutlah | 2 million SHU

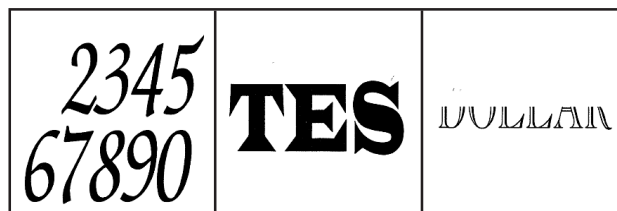
Trinidad Moruga Scorpion | 1.2 – 2 million SHU

[growhotpeppers.com](http://growhotpeppers.com)



● Edited for space

**WORD PLAY** A Rebus puzzle is a picture representation of a common word or phrase. How the letters/images appear within each box will give you clues to the answer! For example, if you saw the letters “LOOK ULEAP,” you could guess that the phrase is “Look before you leap.” *Answers are on the last page!*



## MATHEMATICS

## Sudoku

#209 PUZZLE NO. 9768290

		8		7	1			
		6			5			
7				3		8	1	
9			3			4		
6								5
		3		8		1		2
	3						9	
				5		3	4	6
		2						

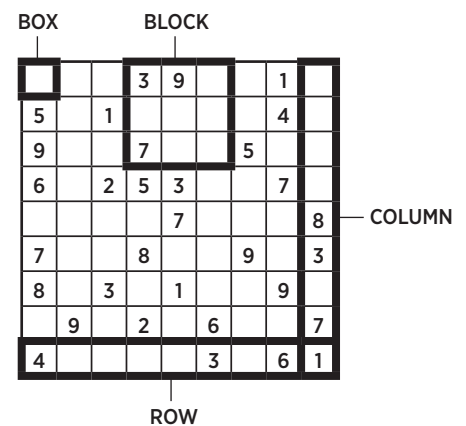
#210 PUZZLE NO. 8270740

	7						9	
3	1						4	7
				4		8		5
			4	6				3
6							7	
	2	4			7	6		
	5	7						9
	9						8	
2			5					

©Sudoku.cool

## SUDOKU HOW-TO GUIDE

1. Each block, row, and column must contain the numbers 1–9.
2. Sudoku is a game of logic and reasoning, so you should not need to guess.
3. Don't repeat numbers within each block, row, or column.
4. Use the process of elimination to figure out the correct placement of numbers in each box.
5. The answers appear on the last page of this newsletter.



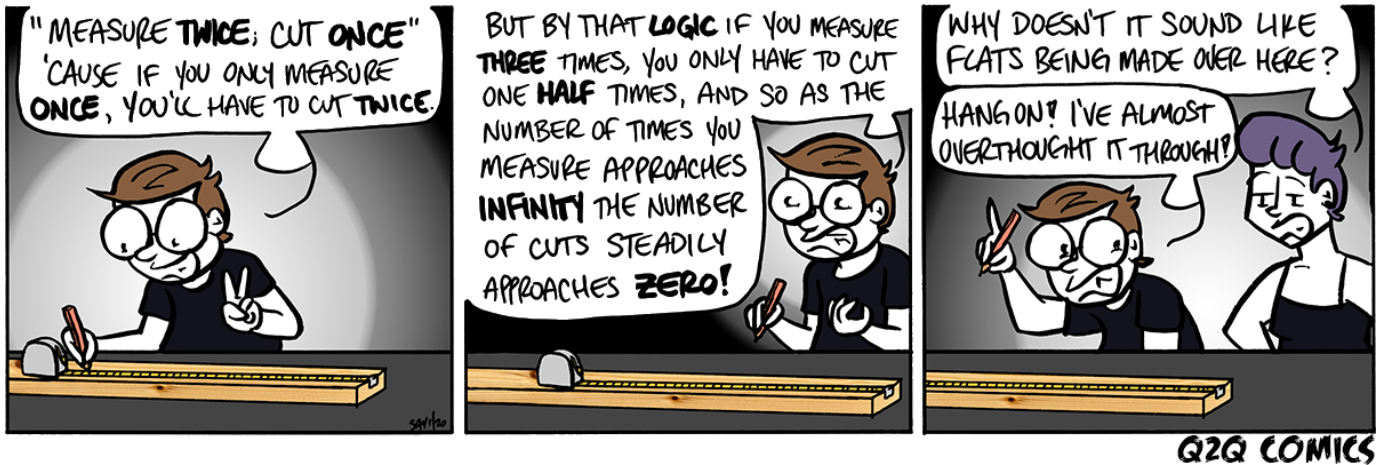
What the example will look like solved ↓

2	4	8	3	9	5	7	1	6
5	7	1	6	2	8	3	4	9
9	3	6	7	4	1	5	8	2
6	8	2	5	3	9	1	7	4
3	5	9	1	7	4	6	2	8
7	1	4	8	6	2	9	5	3
8	6	3	4	1	7	2	9	5
1	9	5	2	8	6	4	3	7
4	2	7	9	5	3	8	6	1



“I measure in my palm and use my eyes to estimate amounts; a tablespoon is a full palm of dried spices.”

RACHAEL RAY // American television host, businesswoman, celebrity cook, and author



## Idiom

### “A stone’s throw”

**Meaning** A short distance

**Origin** It’s literally the distance that a stone can be thrown but has come to mean a short yet not exact distance. It came from Luke 22:41 in *Wycliffe’s Bible* in 1526: “in and he gat himself from them, about a stone’s cast”

Then it was used in Arthur Hall’s translation *The Ten books of Homers Iliades*, 1581: “For who can see a stones throw of ought thing in land or plain.”

Stones hadn’t then been established as the definitive objects to be thrown and the following year Nicholas Lichfield wrote: “The enmyes were come, within the throwe of a Dart.”

No form of the phrase was much used and it wasn’t until 1704 that Jonathan Swift revived it in *The battle of the books*:

“The two Cavaliers had now approach’d within a Throw of a Lance.”

The ‘stone’s throw’ variant was established properly by John Arbuthnot in *The History of John Bull*, 1712, and, following that, there are many citations of the phrase.

Source: [www.phrases.org.uk/meanings/stones-throw.html](http://www.phrases.org.uk/meanings/stones-throw.html)

## DID YOU KNOW?



A **drop** is 1/480 of a fluid ounce or .05 millimeters.



A **jiffy** is about ten milli-seconds. It comes from a computer’s clock cycle.



**Pats** of butter are 1/3 of an ounce.



A Half-million twitter followers is a **wheaton**.



A **span** is 9 inches.



A **barleycorn** is 1/3 of an inch.

Source: [www.mentalfloss.com/article/50608/36-unusual-units-measurement](http://www.mentalfloss.com/article/50608/36-unusual-units-measurement)

“The thing you can’t measure is someone’s heart, someone’s desire. You can measure a 40, his vertical, his bench press, and that might let you know things like, yeah, he can jump high. But desire, his dedication, his determination, that’s something you can’t measure.”

SHANNON SHARPE // American sports analyst



## ART + CULTURE

## Measure

BY ROBERT HASS

Reurrences.  
Coppery light hesitates  
again in the small-leaved

Japanese plum. Summer  
and sunset, the peace  
of the writing desk

and the habitual peace  
of writing, these things  
form an order I only

belong to in the idleness  
of attention. Last light  
rims the blue mountain

and I almost glimpse  
what I was born to,  
not so much in the sunlight

or the plum tree  
as in the pulse  
that forms these lines.

poetryfoundation.org

Robert Hass was born in San Francisco in 1941. He graduated from Marin Catholic High School in 1958 and at the time took a lot of inspiration from well-known poets in the 1950s Bay Area poetry scene. He dedicated himself to writing and was encouraged by his older brother to do so. Hass's writing was greatly influenced by East Asian literary techniques like the haiku. Hass served as the United States Poet Laureate from 1995 to 1997 and won both the National Book Award and shared the Pulitzer Prize in 2007 and 2008.

## WRITING PROMPT

In this poem, entitled *Measure*, Robert Hass is measuring a moment by the things around him. He is grounding himself in the present and looking at what is happening in one quiet and passing second of an ordinary day. Hass is bringing the reader's attention to the fact that time flies so quickly and the greatest success one can have is appreciating each moment they are given. Hass uses words like peace and idleness to show what is important to him and his measure of happiness. Think of moments where you have stopped and appreciated to the fullest — the sights, sounds, tastes, and smells. Now, use elements of this moment as inspiration for a poem, short story, or creative non-fiction essay about your measure of success. Think of things or themes from your idea of success and the moment you chose to imagine and write about what your moment of complete contentment would look like.

## Word Search

R	E	A	N	L	N	H	R	U	U	N	E	U	M
E	E	C	I	D	A	A	L	N	P	N	U	S	U
C	A	P	I	E	T	B	S	O	N	A	L	I	N
U	N	T	I	N	T	I	E	J	P	C	T	S	O
R	G	U	A	E	E	T	N	N	T	L	E	S	A
R	S	E	O	D	N	U	H	C	E	R	S	I	M
E	T	S	H	A	T	A	E	C	A	E	P	L	O
N	N	E	M	A	I	L	M	U	N	M	E	N	U
C	N	N	E	P	O	L	I	E	N	M	C	T	N
E	E	A	E	R	N	N	L	O	A	U	O	L	T
S	M	P	R	T	S	D	I	T	A	S	O	C	A
O	U	A	M	A	I	R	A	M	A	E	T	L	I
R	L	J	I	E	S	U	N	L	I	G	H	T	N
A	P	A	C	O	P	P	E	R	Y	I	E	C	H

MOUNTAIN  
JAPANESE  
IDLENESS  
PLUM  
ATTENTION  
COPPERY  
SUNLIGHT  
SUMMER  
RECUR-  
RENCES  
PEACE  
HABITUAL

## LIST

## Unusual Units of Measurement

BY JASON ENGLISH | *Mental Floss* | May 15, 2013

When it comes to measurement, we have a lot of words that mean a bunch of stuff or a bit of something, but many of those terms have actual, specific meanings.

Let's learn about a whole barrel full of them.

**1. A barrel changes depending on what's in it.** When you're talking about oil, a barrel is exactly 42 gallons. For beer, a barrel is 31.5 gallons. For dry goods, it's 105 dry quarts. That last one was defined by Congress in 1915.

**2. A dash is part of a teaspoon.** Then there's the dash, as in, "just a dash of salt," which is between 1/16 and 1/8 of a teaspoon.

**3. A pinch is part of a dash.** A *pinch* is half a dash, or 1/16 of a teaspoon.

**4. A Smidgen is a real thing.** It's a half of a pinch, or 1/32 of a teaspoon.

**5. Australians used to measure rain by points.** We don't measure rain by drops, but in Australia, they used to measure rain by points. A point was .254 milliliters, so you might say, "We got a hundred points of rain last night!," which sounds like a lot, but isn't.

**6. The Jiffy is about 10 milliseconds.** The jiffy is a unit of time used in computer engineering that has to do with a computer's clock cycle. It's about 10 milliseconds. It means something even faster in physics, where a jiffy is a unit of measurement for the time it takes for light to travel a distance the size of a nucleus.

**7. Manpower is about 1/10 as powerful as horsepower.** So you've heard of horsepower, but did you know there's also a measurable unit of *manpower*? It was worked out to somewhere between 1/8 and a 1/10 of a unit of horsepower. Horsepower was based on the fact that the average brewery horse could move something weighing 330 pounds 100 feet in one minute, stop, and repeat for eight hours. And it would take about eight to 10 men to do the same, so your Camaro might have a 300 horsepower engine, but my Chevy Volt has like a 2000 manpower engine.

**8. A Darwin is, naturally, a unit of measuring evolution.** We also measure things using the names of famous people. A Darwin, for instance, is a special ratio for measuring the rate of evolution. Evolution happening



at the rate of one Darwin would change something by a factor of about 2.7 over a million years.

**9. Movements of your computer mouse are measured in Mickey's.** There's another guy you might have heard of who gave his name to a unit of measurement having to do with your computer mouse. The smallest detectable movement of a computer mouse — somewhere around 1/10 of a millimeter — is called a Mickey.

**10. The Length of a Beard-Second is in dispute.** A beard-second is the average length a man's beard grows in one second, but beard growth experts disagree on what that length actually is. Some say it's 10 nanometers. Some say it's five. Some say, "I can't believe that we're spending our time talking about this."

**11. A Bushel changes depending on the foodstuff.** The USDA has assigned individual bushel measurements to different things we grow in the ground. A bushel of corn is 56 pounds, while a bushel of oats is 32 pounds.

**12. An Oxgang is about 15 acres.** Also lost to history is the oxgang, a unit for measuring the area of land approximately equivalent to 15 acres — or the amount of land that a farmer could plow with an ox in one season.

**13. An Olf is a unit of odor.** Luckily, we've still got the melodious olf. Olf's are used for measuring the air quality of indoor spaces, like offices. One olf is basically the amount of odor of one standard person. So, what's a standard person? The olf standard is a person with a skin area of 1.8 square meters, who bathes 0.7 times per day, and is seated comfortably in a comfortable temperature. If the person becomes slightly active, it rises to 5 olfs. A heavy smoker gives off 25 olfs while smoking and six while not. ●

A measurable unit of *manpower* is somewhere between 1/8 and 1/10 of a unit of horsepower.

Photo by mari\_art  
iStock via  
Getty Images

● Edited for  
space and clarity

## SCIENCE

# How is Snowfall Measured? A Meteorologist Explains How Volunteers Tally Up Winter Storms

BY BILL SYRETT | *The Conversation* | February 19, 2015

The Blue Hill Observatory, a few miles south of Boston, recorded the deepest snow cover in its 130-year history, an incredible 46 inches, in February 2015. The same month, Bangor, Maine, tied its record for deepest snow at 53 inches. Mountainous locations will sometimes see triple-digit snow depths.

Since 1890, the U.S. National Weather Service has relied on a network of volunteer observers, all strictly adhering to the NWS guidelines, to come up with snow measurement numbers over a region. There are over 8,700 cooperative observers across the country who send in their weather data to the NWS daily, some who have done it for over 75 years!

First, you need to understand the difference between snow depth and snowfall.

## How is snow depth measured?

Snow depth should be a measure of the average depth in a given location and its immediate surroundings. It's usually rounded to the nearest whole number. To get a representative number, you need a site with minimal drifting (not always easy to find), and several measurements should be averaged to get a final number. I like 10 because it makes the math easy.

Careful measurement is vital in order to make reasonable estimates for the amount of liquid contained in the snowpack. As hard as it is to believe at times, the snow will eventually melt, and rapid melting could cause problems with flooding. Also, hydrologists' models that are used to predict water levels critically depend upon good initial data collection, though improved satellite data has helped reduce their reliance on any individual measurement.

Snow depth is like the sum of individual snowfalls, if one assumes no sublimation — snow turning into water vapor — or melting from the first snowfall until now. That assumption would almost always be wrong, of course. But if you suspend reality for a moment, the depth will still never exceed the sum of all snowfalls because snow is compressible. So, two 10.5-inch (27-centimeter) snowfalls may accumulate to a depth of only 17 inches (43 cm).

## How are snowfall totals measured?

Snowfall is the amount of snow that accumulates during a given time, usually a 24-hour period. In a perfect world, this 24-hour period would end at

midnight, but the vast majority of National Weather Service cooperative observers take their daily observation in the morning.

To properly measure snowfall, you need a flat, level surface. As with snow depth, you want to avoid areas of drifting when you're measuring snowfall. The National Weather Service suggests the use of a snow board, which is a white surface that will absorb very little sunlight and stay close to the ambient air temperature. Any cold surface will do, though.

Keeping in mind that consistency is critical, the goal here is to make an accurate measurement that is representative of the surrounding area and consistent with others making snowfall measurements.

So, let's consider three common scenarios. Here in the eastern U.S., we often have to deal with snow that changes to rain during the course of a storm. Imagine 6.0 inches (15 cm) of snow falls, then an inch (2.5 cm) of sleet which compacts the snow to a 4-inch (10-cm) depth. Then, on top of that falls an inch of freezing rain which further compacts the snow to 2.6-inch (6.6-cm) depth by the end of the observation period. What should be listed as the daily snowfall? The snow depth?

In this situation, when the snow transitions to sleet, the snow board should be cleared and the maximum depth of snow recorded — 6 inches (15 cm) in this case. Do the same with the sleet and this will add an inch (2.5 cm) to the snowfall — technically, “solid precipitation” — total. Freezing rain is never added to the daily snowfall total because it is in liquid form when it reaches the ground. Thus, the daily snowfall is 7.0 inches (measured to the nearest tenth of an



National Weather Service snow board and snow measuring stick.

Photo by Famartin/  
Wikimedia Commons

inch) (17.8 cm), while the snow depth at observation is rounded up from 2.6 inches (6.6 cm) to 3 inches (7.6 cm).

Imagine a case where three heavy snow showers occur one afternoon, two dumping 1.5 inches (3.8 cm) before melting completely and then a third 1.8-inch (4.6-cm) event. The daily snowfall would be reported as the greatest depth achieved during that period, 1.8 inches (4.6 cm). This assumes an observer is there to measure each short-lived accumulation. But because most observers are volunteers, that's not always the case, unfortunately.

Finally, we come to the controversy. Let's assume a steady snow falls for the entire 24-hour period at a rate of 2.0 inches (5.1 cm) per hour. If the snow board were cleared every hour, the daily snowfall would be 48.0 inches (122 cm).

But what if the observer could be there only at the daily observation time? By then the snow will have compacted some, depending upon the temperature and the amount of liquid in the snow, which can vary between about a quarter-inch and 3 inches (0.6 - 7.6 cm) of liquid water for every 10 inches (25 cm) of snow. That liquid-to-solid ratio depends upon many factors, including the temperature within the cloud where the snow was produced, which in turn helps determine how large the snowflakes can get. Large, airy snowflakes produce less-dense snow and lower liquid-to-solid ratios, in general.

This once-a-day observer would log significantly less snowfall — for the exact same event — than the person who cleared the board every hour. This is a problem. The National Weather Service addresses it by mandating that no more than four snowfall measurements should be



made in any 24-hour period. Ideally, then, an observer who went to the snowboard every six hours and cleared 10.5 inches (26 cm), 9.3 inches (23.5 cm), 11.5 inches (29 cm) and 10.8 inches (27 cm) would get the officially correct snowfall measurement of 42.1 inches (107 cm).

Several years ago, an observer in New York measured 77.0 inches (196 cm) of snow in a 24-hour period, which would have broken the record for heaviest one-day snowfall in U.S. history. However, the National Weather Service determined that he cleared the snowboard much too frequently, thus inflating the daily total and invalidating the record.

For those who want to stick with measuring only what falls from the sky, check out the Community Collaborative Rain, Hail and Snow Network. Anyone may join, but those who live “in the middle of nowhere” can provide an invaluable service by helping fill gaps in the data that limit the effectiveness of hydrological models. ●

The author measuring the paltry snow accumulation at his observation location in Pennsylvania. Note the instrument shelters in the background.

Photo by  
Marisa Ferger

✎ Edited  
for space

## RANDOM-NEST

### 4 yoga poses for relaxation

FROM YOGAJOURNAL.COM

**Paschimottanasana** | Seated Forward Bend  
This pose promotes relaxation throughout your entire body — from calming your brain to releasing tension in your legs. When you move into this forward bend, you'll release physical and mental stress. If touching your feet is difficult, you can modify this pose by using a strap.

**Malasana** | Garland Pose  
Is your mental and emotional stress turning into physical tension? Release it through Garland Pose. This pose stretches your hips, eases back pain, and releases your chest, allowing you to open your body and move into a state of relaxation.

Yoga teacher Abbie Mood says this grounding pose is particularly helpful for those experiencing anxiety, as it draws your energy downward. This recalibration will allow you to release any tension or

stress stored in your head — making it an ideal yoga pose for relaxation.

**Balasana** | Child's Pose  
You may elect to return to this pose frequently during your practice — and, let's be honest, in your daily life — as it often serves as a “home base.” There's a reason for that. Balasana (Child's Pose) helps relieve stress, fatigue, as well as physical pain in your back and hips.

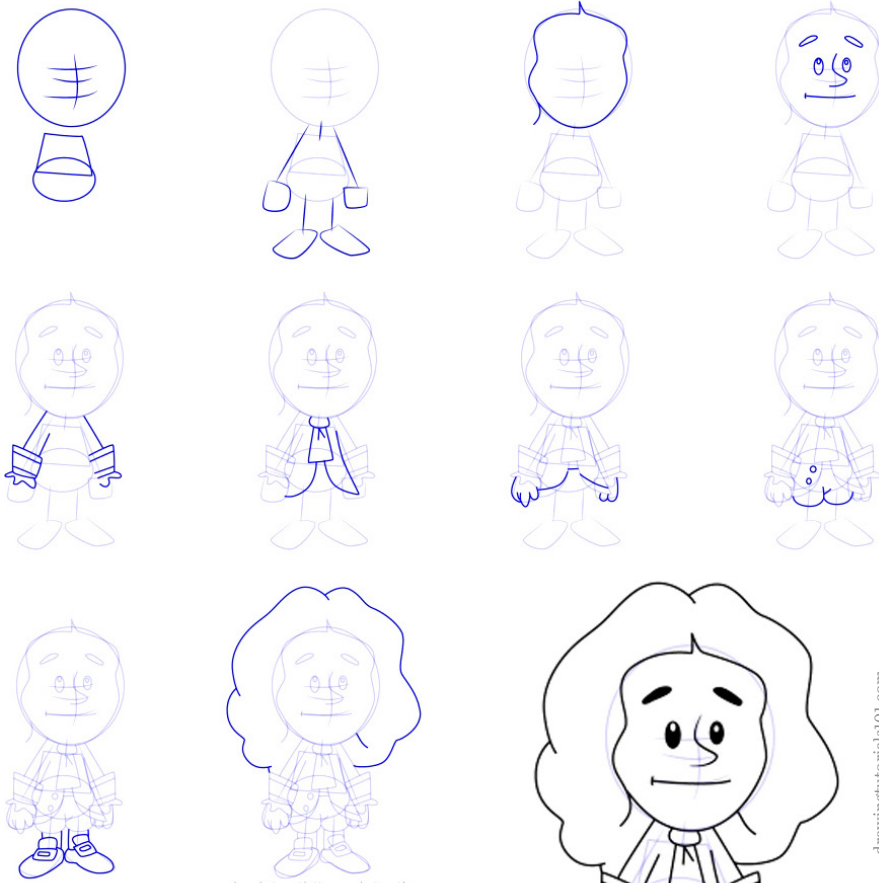
Yoga teacher Sarah Herrington explains that one of the reasons why Child's Pose feels so relaxing is its ability to stretch the muscles alongside the backside of your body — the ones that become tense easily. While the stress or tension you're experiencing may be in your head, you may be feeling some physical pain as a result. This restorative posture will help you relax, easing some of that tightness and tension.

And if Child's Pose doesn't feel relaxing to you? Add props or try a variation to make it more comfortable.

**Sukhasana** | Easy Pose  
You may be familiar with Easy Pose as a common meditation posture. However, it's also a great yoga pose for relaxation. This pose simultaneously activates your body's relaxation response (your parasympathetic nervous system) and deactivates your stress response (sympathetic nervous system), making it a calm-inducing posture.

Yoga teacher Ingrid Sturgis suggests adding a bolster or cushion under your seat in this posture to ground your hips. While in this pose, make sure to focus on your breath. Sturgis advises moving through a breath pattern consisting of a breath in for four counts and a breath out for six counts.

## HOW TO DRAW ISAAC NEWTON



Isaac Newton is best known for his theory about the **law of gravity** and his "Principia Mathematica" (1686) with its three laws of motion which greatly influenced the Enlightenment in Europe. [history.com](http://history.com)



## WORDS OF ENCOURAGEMENT

Value is often perceived as exclusively measurable in our society. People become defined by the product they produce, but that's ludicrous. If we stop subscribing to that belief, we are spiritually liberated and can truly begin to understand our own value. Success isn't defined by what you produce but by the imprints that we leave. We gain a sense of that with every newsletter we send out because we serve people who we value. I don't believe friendship is defined by the amount of interaction we have or by the product that is produced, but by human connection. Thank you for your continued support, it's what keeps us going. I hope you enjoyed this week's edition of *The Warbler*, and we hope you have a great week. Your friends,

*Taylor and the APAEP team*



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"I do know one thing about me: I don't measure myself by others' expectations or let others define my worth."

SONIA SOTOMAYOR // Associate Justice of the Supreme Court of the United States

## Answers

SUDOKU #209

2	4	8	9	7	1	6	5	3
3	1	6	8	4	5	7	2	9
7	5	9	6	3	2	8	1	4
9	2	5	3	1	6	4	8	7
6	8	1	7	2	4	9	3	5
4	7	3	5	8	9	1	6	2
5	3	4	1	6	7	2	9	8
1	9	7	2	5	8	3	4	6
8	6	2	4	9	3	5	7	1

SUDOKU #210

4	7	8	3	2	5	1	9	6
3	1	5	8	9	6	2	4	7
9	6	2	7	4	1	8	3	5
7	8	1	4	6	2	9	5	3
6	3	9	1	5	8	4	7	2
5	2	4	9	3	7	6	1	8
8	5	7	6	1	4	3	2	9
1	9	6	2	7	3	5	8	4
2	4	3	5	8	9	7	6	1

Rebus Puzzle  
Page 3

1. No one there
2. Setback
3. Half dollar

Send ideas and comments to:

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UNTIL NEXT TIME